

FILE 'HOME' ENTERED AT 09:45:52 ON 29 APR 2004

=> file agricola biosis caplus caba

=> s gdp-mannose pyrophosphorylase

L2 159 GDP-MANNOSE PYROPHOSPHORYLASE

=> duplicate remove l2

L3 104 DUPLICATE REMOVE L2 (55 DUPLICATES REMOVED)

=> d ti 1-25

L3 ANSWER 1 OF 104 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

TI Maize nucleic acid encoding a **GDP-mannose pyrophosphorylase**.

L3 ANSWER 2 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Properties of **GDP-mannose Pyrophosphorylase**,
a Critical Enzyme and Drug Target in Leishmania mexicana

L3 ANSWER 3 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Purification, cloning, sequences and characterization of algal
GDP-mannose-3',5'-epimerases and their use for production of L-galactose
and ascorbate

L3 ANSWER 4 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Changes in gene expression in the wood-forming tissue of transgenic hybrid
aspen with increased secondary growth

L3 ANSWER 5 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Genetic basis of E. coli O128 polysaccharide biosynthesis gene cluster

L3 ANSWER 6 OF 104 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

TI Genes involved in the synthesis of the exopolysaccharide methanolan by the
obligate methylophilic Methylobacillus sp. strain 12S.

L3 ANSWER 7 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Identification of cell surface determinants in Candida albicans reveals
Tsalp, a protein differentially localized in the cell

L3 ANSWER 8 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Sequence of Escherichia coli O128 antigen biosynthesis cluster and
functional identification of an α -1,2-fucosyltransferase

L3 ANSWER 9 OF 104 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 3

TI Overexpression of **GDP-mannose pyrophosphorylase** in Saccharomyces cerevisiae corrects defects in
dolichol-linked saccharide formation and protein glycosylation.

L3 ANSWER 10 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Identification, characterization, cloning and sequence of multimeric
GDP-mannose-3',5'-epimerase from Arabidopsis thaliana and other plants,
and use of recombinant GDP-mannose-3',5'-epimerase for production of
ascorbic acid

L3 ANSWER 11 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Aberrantly expressed proteins in laser capture microdissected tumors

L3 ANSWER 12 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Cloning, characterization and biotechnological use of Physcomitrella
patens proteins and enzymes involved in the synthesis of amino acids,
vitamins, cofactors, nucleotides and nucleosides

L3 ANSWER 13 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Enhanced stress resistance in transgenic plants with increased expression
of VTC4 gene encoding **GDP-mannose pyrophosphorylase**

L3 ANSWER 14 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Manipulation of genes for antioxidative enzymes

L3 ANSWER 15 OF 104 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

TI Characterization of genes responsible for biosynthesis of
exopolysaccharide (methanolan) in methylophilic, Methylobacillus sp. strain
12S.

L3 ANSWER 16 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN

TI Production of fucosylated carbohydrates by enzymatic fucosylation
synthesis of sugar nucleotides; and in situ regeneration of GDP-fucose

L3 ANSWER 17 OF 104 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Disruption of mannose activation in *Leishmania mexicana*: **GDP-mannose pyrophosphorylase** is required for virulence, but not for viability.

L3 ANSWER 18 OF 104 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 DUPLICATE 5
 TI Identification and characterization of the *Cryptococcus neoformans* phosphomannose isomerase-encoding gene, *MAN1*, and its impact on pathogenicity.

L3 ANSWER 19 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Molecular evolution of the GDP-mannose pathway genes (*manB* and *manC*) in *Salmonella enterica*

L3 ANSWER 20 OF 104 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Mutation of the homologue of **GDP-mannose pyrophosphorylase** alters cell wall structure, protein glycosylation and secretion in *Hansenula polymorpha*.

L3 ANSWER 21 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Identification of a *Burkholderia mallei* polysaccharide gene cluster by subtractive hybridization and demonstration that the encoded capsule is an essential virulence determinant

L3 ANSWER 22 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 TI L-Ascorbic acid biosynthesis

L3 ANSWER 23 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Parallel substrate feeding and pH-control in shaking-flasks

L3 ANSWER 24 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Purification, cloning, expression and characterization of **GDP-mannose pyrophosphorylase** and GDP-glucose pyrophosphorylase

L3 ANSWER 25 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Development and use of miniaturized parallel experiment technology for bioprocess development

=> d bib abs 22 24 13 10 1 3 4 9

L3 ANSWER 22 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:82323 CAPLUS
 DN 134:189524
 TI L-Ascorbic acid biosynthesis
 AU Smirnoff, Nicholas
 CS School of Biological Sciences, University of Exeter, Exeter, EX4 4PS, UK
 SO Vitamins and Hormones (San Diego, CA, United States) (2001), 61, 241-266
 CODEN: VIHOAQ; ISSN: 0083-6729
 PB Academic Press
 DT Journal; General Review
 LA English
 AB A review, with 102 refs. Biosynthesis of L-ascorbate (vitamin C) occurs by different pathways in plants and mammals. Yeast contain D-erythroascorbate, a C5 analog of ascorbate. UDP-D-glucuronic acid is the precursor in mammals. Loss of UDP forms glucuronic acid/glucuronolactone. Reduction of these at C-1 then forms L-gulonic acid/L-gulono-1,4-lactone. The lactone is oxidized by a microsomal L-gulono-1,4-lactone oxidase to ascorbate. Only the L-gulono-1,4-lactone oxidase has been purified and cloned, and very little is known about the properties of the other enzymes. Plants form ascorbate from GDP-D-mannose via GDP-L-galactose, L-galactose, and L-galactono-1,4-lactone. The final oxidation of L-galactono-1,4-lactone to ascorbate is catalyzed by a mitochondrial L-galactono-1,4-lactone dehydrogenase located on the inner membrane and using cytochrome c as electron acceptor. **GDP-mannose pyrophosphorylase** and L-galactono-1,4-lactone dehydrogenase have been cloned. Yeast synthesizes D-erythroascorbate from D-arabinose and D-arabinono-1,4-lactone in a pathway analogous to that in plants. The plant, mammalian, and yeast aldonolactone oxidase/dehydrogenases that catalyze the last step in each pathway have significant sequence homol. L-Gulono-1,4-lactone oxidase is mutated and not expressed in animals, such as primates, that have lost ascorbate biosynthesis capacity. Assessment of the literature reveals that little is known about many of the enzymes involved in ascorbate biosynthesis or. About the factors controlling flux through the pathways. There is also a possibility that minor alternative pathways exist in plants and mammals.
 (c) 2001 Academic Press.

RE.CNT 102 THERE ARE 102 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 24 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:838967 CAPLUS
 DN 134:173718
 TI Purification, cloning, expression and characterization of **GDP-mannose pyrophosphorylase** and GDP-glucose pyrophosphorylase
 AU Ning, Baitang
 CS University of Arkansas for Medical Sciences, USA
 SO (2000) 151 pp. Avail.: UMI, Order No. DA9965310
 From: Diss. Abstr. Int., B 2000, 61(3), 1225-1226
 DT Dissertation
 LA English
 AB Unavailable

L3 ANSWER 13 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:1004122 CAPLUS
 DN 140:2930
 TI Enhanced stress resistance in transgenic plants with increased expression of VTC4 gene encoding **GDP-mannose pyrophosphorylase**
 IN Conklin, Patricia L.; Last, Robert L.
 PA USA
 SO U.S. Pat. Appl. Publ., 25 pp., Cont.-in-part of U.S. Ser. No. 441,318.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002100075	A1	20020725	US 2001-909600	20010720
PRAI	US 1999-126680P	P	19990329		
	US 1999-441318	A2	19991116		

AB The present invention includes a transgenic plant containing a **GDP-mannose pyrophosphorylase** gene. A pathway for ascorbic acid biosynthesis that features GDP-mannose and L-galactose has recently been proposed for plants. A collection of ascorbic acid-deficient mutants of Arabidopsis thaliana that are valuable tools for testing of a novel ascorbic acid biosynthetic pathway have been isolated. The best characterized of these mutants (vtc1-vitamin c) contains ~25% of wild type ascorbic acid and is defective in ascorbic acid biosynthesis. Using a combination of biochem., mol., and genetic techniques, it has been conclusively demonstrated that the VTC1 locus encodes **GDP-mannose pyrophosphorylase** (mannose-1-P guanylttransferase). This enzyme provides GDP-mannose, which is used for cell wall carbohydrate biosynthesis and protein glycosylation, as well as for ascorbic acid biosynthesis.

L3 ANSWER 10 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:977982 CAPLUS
 DN 138:51919
 TI Identification, characterization, cloning and sequence of multimeric GDP-mannose-3',5'-epimerase from Arabidopsis thaliana and other plants, and use of recombinant GDP-mannose-3',5'-epimerase for production of ascorbic acid
 IN Wolucka, Beata
 PA Vlaams Interuniversitair Instituut voor Biotechnologie Vzw, Belg.
 SO PCT Int. Appl., 138 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002103001	A1	20021227	WO 2002-EP6891	20020614
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRAI	EP 2001-202278	A	20010615		

AB The identification of a new key enzyme in vitamin C synthesis, and its use to modulate vitamin C synthesis in eukaryotic cells are disclosed. Specifically, the isolation of a multimeric GDP-mannose-3',5'-epimerase, the identification, cloning and expression of a nucleic acid sequence encoding GDP-mannose-3',5'-epimerase, methods of producing GDP-mannose-3',5'-epimerase, transgenic plants and microorganisms that express the GDP-mannose-3',5'-epimerase, and methods of production of ascorbic

acid using the GDP-mannose-3',5'-epimerase are disclosed. Purification of GDP-mannose-3',5'-epimerase from Arabidopsis thaliana, and kinetic and physicochem. properties of the enzyme are described. The nucleotide sequence and the encoded amino acid sequence of the A. thaliana GDP-mannose-3',5'-epimerase are disclosed. Putative GDP-mannose-3',5'-epimerase from rice, tomato, corn, ice plant, soybean, potato, Medicago truncatula, sorghum, wheat, barley, and lotus are identified by using scanning of public DNA databases for sequences that exhibited high similarity to the A. thaliana gene.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 1 OF 104 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 1
AN 2004:222474 BIOSIS
DN PREV200400225327
TI Maize nucleic acid encoding a **GDP-mannose pyrophosphorylase**.
AU Dhugga, Kanwarpal S. [Inventor, Reprint Author]; Wang, Xun [Inventor];
Bowen, Benjamin A. [Inventor]
CS ASSIGNEE: Pioneer Hi-Bred International, Inc.
PI US 6706951 March 16, 2004
SO Official Gazette of the United States Patent and Trademark Office Patents,
(Mar 16 2004) Vol. 1280, No. 3. <http://www.uspto.gov/web/menu/patdata.html>
. e-file.
ISSN: 0098-1133 (ISSN print).
DT Patent
LA English
ED Entered STN: 21 Apr 2004
Last Updated on STN: 21 Apr 2004
AB The invention relates to the genetic manipulation of plants, particularly
to the expression of galactomannan biosynthetic genes in transformed
plants. Nucleotide sequences for the **GDP-mannose pyrophosphorylase** genes and methods for their use are provided.
The sequences find use in the production of gum in plants. A nucleic acid
encoding a **GDP-mannose pyrophosphorylase**
from maize is taught, as are plants and plant cells transformed with it.

L3 ANSWER 3 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:2639 CAPLUS
DN 140:73161
TI Purification, cloning, sequences and characterization of algal
GDP-mannose-3',5'-epimerases and their use for production of L-galactose
and ascorbate
IN McMullin, Thomas W.; Peng, Susan Shuyun
PA Arkion Life Sciences LLC, USA
SO PCT Int. Appl., 94 pp.
CODEN: PIXXD2

DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004000233	A2	20031231	WO 2003-US19951	20030625
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI US 2002-391763P P 20020625

AB GDP-mannose-3',5'-epimerases from algae have been identified, isolated, purified, and/or cloned. Disclosed herein are algal GDP-mannose-3',5'-epimerases from any algae, including those of the genera Chlamydomonas, Prototheca, and Chlorella. Also disclosed herein are nucleic acid and amino acid sequences for GDP-mannose-3',5'-epimerases from Chlamydomonas reinhardtii and the use thereof to produce genetically modified host cells, as well as in methods to produce L-galactose, ascorbic acid, or intermediate products in the ascorbic acid biosynthetic pathway. Identification of a putative GDP-mannose-3',5'-epimerase gene and protein from C. reinhardtii is described. The cDNA sequence and the encoded amino acid sequence of C. reinhardtii GDP-mannose-3',5'-epimerase are also disclosed.

L3 ANSWER 4 OF 104 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:603482 CAPLUS
DN 140:56539

TI Changes in gene expression in the wood-forming tissue of transgenic hybrid aspen with increased secondary growth

AU Israelsson, Maria; Eriksson, Maria E.; Hertzberg, Magnus; Aspeborg, Henrik; Nilsson, Peter; Moritz, Thomas

CS Department of Forest Genetics and Plant Physiology, Umea Plant Science Centre, Swedish University of Agricultural Sciences, Umea, 90183, Swed.

SO Plant Molecular Biology (2003), 52(4), 893-903

CODEN: PMBIDB; ISSN: 0167-4412

PB Kluwer Academic Publishers

DT Journal

LA English

AB Transgenic lines of hybrid aspen with elevated levels of gibberellin (GA) show greatly increased nos. of xylem fibers and increases in xylem fiber length. These plants therefore provide excellent models for studying secondary growth. We have used cDNA microarray anal. to investigate how gene transcription in the developing xylem is affected by GA-induced growth. A recent investigation has shown that genes encoding lignin and cellulose biosynthetic enzymes, as well as a number of transcription factors and other potential regulators of xylogenesis, are under developmental-stage-specific transcriptional control. The present study shows that the highest transcript changes in our transgenic trees occurs in genes generally restricted to the early stages of xylogenesis, including cell division, early expansion and late expansion. The results reveal genes among those arrayed that are up-regulated with an increased xylem production, thus indicating key components in the production of wood.

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 104 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 3

AN 2003:37288 AGRICOLA

DN IND23329047

TI Overexpression of **GDP-mannose**

pyrophosphorylase in *Saccharomyces cerevisiae* corrects defects in dolichol-linked saccharide formation and protein glycosylation.

AU Janik, A.; Sosnowska, M.; Kruszewska, J.; Krotkiewski, H.; Lehle, L.; Palamarczyk, G.

AV DNAL (381 B522)

SO *Biochimica et biophysica acta* = International journal of biochemistry and biophysics, Apr 7, 2003. Vol. 1621, No. 1. p. 22-30
Publisher: Amsterdam : Elsevier Science B.V.
CODEN: BBACAQ; ISSN: 0006-3002

NTE Includes references

CY Netherlands

DT Article

FS Non-U.S. Imprint other than FAO

LA English

AB Thermosensitive mutants of *Saccharomyces cerevisiae*, affected in the endoplasmic reticulum (ER) located glycosylation, i.e. in Dol-P-Man synthase (dpml), in beta-1,4 mannosyl transferase (alg1) and in alpha-1,3 mannosyltransferase (alg2), were used to assess the role of GDP-Man availability for the synthesis of dolichol-linked saccharides. The mutants were transformed with the yeast gene MPG1 (PSA1/VIG9) encoding GDP-Man pyrophosphorylase catalyzing the final step of GDP-Man formation. We found that overexpression of MPG1 allows growth at non-permissive temperature and leads to an increase in the cellular content of GDP-Man. In the alg1 and alg2 mutants, complemented with MPG1 gene, N-glycosylation of invertase was in part restored, to a degree comparable to that of the wild-type control. In the dpml mutant, the glycosylation reactions that depend on the formation of Dol-P-Man, i.e. elongation of Man5GlcNAc2-PP-Dol, O-mannosylation of chitinase and synthesis of GPI anchor were normal when MPG1 was overexpressed.

=> s mutant and complement? and review

L4 260 MUTANT AND COMPLEMENT? AND REVIEW

=> duplicate remove l4

L5 238 DUPLICATE REMOVE L4 (22 DUPLICATES REMOVED)

=> d ti 1-50

L5 ANSWER 1 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN

TI Signaling the brain in systemic inflammation: The role of **complement**

L5 ANSWER 2 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN

TI Neurotrophins in the ear: their roles in sensory neuron survival and fiber guidance

L5 ANSWER 3 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI The intricate role of **complement** component C4 in human systemic lupus erythematosus

L5 ANSWER 4 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Proteomics as a tool to study microbial interactions

L5 ANSWER 5 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Protein kinases driving the cell cycle

L5 ANSWER 6 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI A Heme Chaperone for Cytochrome c Biosynthesis

L5 ANSWER 7 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI The first model mice for mitochondrial DNA-based diseases

L5 ANSWER 8 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Detecting functional interactions in a gene and signaling network by time-resolved somatic **complementation** analysis

L5 ANSWER 9 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI MAPK, CREB and zif268 are all required for the consolidation of recognition memory.

L5 ANSWER 10 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI In Vivo Analysis of Voltage-Dependent Calcium Channels

L5 ANSWER 11 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Host response to Neisseria meningitidis lacking lipopolysaccharides

L5 ANSWER 12 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Pathology of the first model mouse for mitochondrial DNA-based diseases and interaction theory of mammalian mitochondria

L5 ANSWER 13 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Experimental gene interaction studies with SERT **mutant** mice as models for human polygenic and epistatic traits and disorders

L5 ANSWER 14 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Genetic analysis of the second chromosome centromeric heterochromatin of Drosophila melanogaster

L5 ANSWER 15 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Functional glycoconjugates involved in cellular interaction.

L5 ANSWER 16 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Cardiovascular and renal phenotyping of genetically modified mice: A challenge for traditional physiology.

L5 ANSWER 17 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI N-ethyl-N-nitrosourea mouse mutants in the dissection of behavioural and psychiatric disorders

L5 ANSWER 18 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Cytogenetic tools for Arabidopsis thaliana

L5 ANSWER 19 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Recent insights into the pathophysiology of paroxysmal nocturnal hemoglobinuria

L5 ANSWER 20 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Molecular strategies for developing salt tolerant crops

L5 ANSWER 21 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Pharmacogenomics and animal models of schizophrenia.

L5 ANSWER 22 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Identification of a nuclear factor kappa B-dependent gene network

L5 ANSWER 23 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
TI Genetic regulation of ethylene perception and signal transduction related to flower senescence

L5 ANSWER 24 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI URA3 as a selectable marker for disruption and virulence assessment of Candida albicans genes

L5 ANSWER 25 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Drosophila bHLH-PAS developmental regulatory proteins

L5 ANSWER 26 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Structural basis for mannose-binding protein function in innate immunity

L5 ANSWER 27 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Engineering salinity tolerance in crop plants: A reality.

L5 ANSWER 28 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Studies on the prevention of aerobic spoilage of silage by killer yeast, *Kluyveromyces lactis*

L5 ANSWER 29 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Use of genomics tools to isolate key ripening genes and analyse fruit maturation in tomato

L5 ANSWER 30 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Technical challenges in applying capillary electrophoresis-single strand conformation polymorphism for routine genetic analysis.

L5 ANSWER 31 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Structural and functional diversity of connexin genes in the mouse and human genome

L5 ANSWER 32 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Regulated transcription of the immediate-early gene Zif268: Mechanisms and gene dosage-dependent function in synaptic plasticity and memory formation.

L5 ANSWER 33 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Fusion proteins of human gonadotropins and gonadotropin-receptor complexes

L5 ANSWER 34 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Transvection in *Drosophila*

L5 ANSWER 35 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI **Complement** factor H mutations lead to the development of atypical forms of hemolytic-uremic syndrome

L5 ANSWER 36 OF 238 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
 TI Immune response to poxvirus infections in various animals. DUPLICATE 6

L5 ANSWER 37 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI **Mutant** Mammalian Cells as Tools to Delineate the Sterol Regulatory Element-Binding Protein Pathway for Feedback Regulation of Lipid Synthesis

L5 ANSWER 38 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Bypassing natural sperm selection during fertilization: the **mutant** offspring experience and the alternative of spermiogenesis in vitro

L5 ANSWER 39 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Increase in stability of *Fusarium heterosporum* lipase.

L5 ANSWER 40 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Molecular phenotyping of mouse **mutant** resources by RNA expression profiling

L5 ANSWER 41 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Enzyme fragment **complementation**: A flexible high throughput screening assay technology.

L5 ANSWER 42 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Current progress in plant genome research and tree biotechnology -present and future prospects-

L5 ANSWER 43 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Analysis of sake yeast genes -Monography

L5 ANSWER 44 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI **Mutant** deficient in cold hardiness: what can they reveal about freezing tolerance?

L5 ANSWER 45 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Glycosynthases: new tools for oligosaccharide synthesis

L5 ANSWER 46 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Mitochondria-specific system preventing expression of diseases phenotypes by **mutant** mtDNA

L5 ANSWER 47 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Pharmacological treatment of the biochemical defect in cystic fibrosis

airways.

L5 ANSWER 48 OF 238 CAPLUS COPYRIGHT 2004 ACS on STN
TI Transmission ratio distortion, sterility, and control of the t-complex
function in sperm

L5 ANSWER 49 OF 238 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Prokaryotic DNA polymerase I: Evolution, structure, and "base flipping"
mechanism for nucleotide selection.

L5 ANSWER 50 OF 238 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 9
TI Structure and function of heterotrimeric G proteins in plants.

=> s (vitamin c) and plant
L6 4404 (VITAMIN C) AND PLANT

=> s 16 and transform? and DNA
L7 3 L6 AND TRANSFORM? AND DNA

=> d ti 1-3

L7 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
TI **DNA** construct containing D-galacturonate reductase and method
for increasing production of **vitamin C** in a
plant

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
TI Increasing **vitamin C** content of plants by yeast
D-arabino- γ -lactone oxidase

L7 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
TI Alcohol/aldehyde dehydrogenases from Gluconobacter oxydans and their
fusion proteins and use in enzymic synthesis of ascorbic acid

=> d bib abs 1-3

L7 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:571157 CAPLUS
DN 139:129162
TI **DNA** construct containing D-galacturonate reductase and method
for increasing production of **vitamin C** in a
plant

IN Agius Guadalupe, Maria Fernanda; Botella Mesa, Miguel Angel; Valpuesta
Fernandez, Victoriano
PA Plant Bioscience Limited, UK
SO PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003060136	A2	20030724	WO 2002-GB5818	20021219
	WO 2003060136	A3	20030828		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRAI	ES 2001-2896	A	20011227		
AB	Provided are DNA constructs that comprise a DNA mol. encoding a protein with D-galacturonate reductase activity involved in L-ascorbic acid synthesis in plant cells and a region for initiating functional transcription in plants. The invention relates to protein and nucleotide sequence of D-galacturonate reductase of strawberry. The constructs have utility in increasing vitamin C production in plants, and making plants more resistant to stress. Also provided are related materials and methods for performing the invention.				

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:78550 CAPLUS

DN 134:142747
 TI Increasing **vitamin C** content of plants by yeast
 D-arabino- γ -lactone oxidase
 IN Hunter, Karl John
 PA Unilever PLC, UK; Unilever NV; Hindustan Lever Limited
 SO PCT Int. Appl., 39 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001007634	A1	20010201	WO 2000-EP5965	20000627
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

PRAI EP 1999-305939 A 19990726
 AB The invention relates to plants or products derivable therefrom having an elevated content of **Vitamin C**, by **transformation** of **plant** by yeast D-arabino- γ -lactone oxidase resulted in higher level (at least two-fold) of ascorbic acid. In particular the invention relates to a process for producing plants or **plant** tissues having an elevated content of **vitamin C**, comprising the steps, (i) **transformation** of a **plant** cell with a gene construct followed by (ii) the regeneration of a genetically modified **plant** or **plant** tissue from the **transformed plant** cell of the **transformation** step (i), wherein the gene construct comprises a polynucleotide sequence capable of expressing a polypeptide product with an ability to catalyze conversion of L-galactono-1,4-lactone to **vitamin C**, characterized in that said polynucleotide sequence is derived from a non-**plant** source.
 RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:236562 CAPLUS
 DN 128:280233
 TI Alcohol/aldehyde dehydrogenases from Gluconobacter oxydans and their fusion proteins and use in enzymic synthesis of ascorbic acid
 IN Asakura, Akira; Hoshino, Tatsuo; Ojima, Setsuko; Shinjoh, Masako; Tomiyama, Noribumi
 PA F. Hoffmann-La Roche A.-G., Switz.
 SO Eur. Pat. Appl., 58 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 832974	A2	19980401	EP 1997-115801	19970911
	EP 832974	A3	19991110		
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			
	CN 1183472	A	19980603	CN 1997-119521	19970918
	JP 10229885	A2	19980902	JP 1997-273790	19970919
	BR 9704748	A	19981110	BR 1997-4748	19970919
PRAI	EP 1996-115001		19960919		

AB The present invention is directed to a recombinant enzyme preparation having an alc. and/or aldehyde dehydrogenase activity which comprises one or more enzymic polypeptide(s) selected from the group consisting of 4 polypeptides which are isolated from Gluconobacter oxydans DSM 4025 and their chimeric recombinant enzymes, as well functional derivs. of the polypeptides identified above which contain addition, insertion, deletion and/or substitution of one or more amino acid residue(s). **DNA** mols. encoding such polypeptides, vectors comprising such **DNA** mols., host cells **transformed** by such vectors, and processes for the production of such recombinant enzyme preps., aldehydes, ketones or carboxylic acids by using such enzyme preps. are provided. Specifically, the synthesis of 2-keto-L-gulonic acid and L-ascorbic acid (**vitamin C**) is provided through the use of these enzymes..

=> s (ascorbic acid) and plant and transform? and (DNA or nucleic)
 L8 25 (ASCORBIC ACID) AND PLANT AND TRANSFORM? AND (DNA OR NUCLEIC)

=> duplicate remove l8

L9 25 DUPLICATE REMOVE L8 (0 DUPLICATES REMOVED)

=> d ti 1-25

L9 ANSWER 1 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI DNA construct containing D-galacturonate reductase and method for increasing production of vitamin C in a **plant**

L9 ANSWER 2 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI Process for the production of polypeptides in mammalian cell cultures

L9 ANSWER 3 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI Sequences of **plant** dehydroascorbate reductase ('dhar') genes and their uses in modulating **ascorbic acid** levels in plants

L9 ANSWER 4 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI Vanillin biosynthetic pathway enzyme from Vanilla planifolia

L9 ANSWER 5 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI Petunia hybrida gene Shooting encoding cytokinin biosynthesis enzyme tRNA-IPT and uses in **plant** growth regulation and cosmetic preparations

L9 ANSWER 6 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI Monocotyledonous **plant transformation**

L9 ANSWER 7 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI **Ascorbic acid** production from yeasts

L9 ANSWER 8 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

TI Agrobacterium-mediated **transformation** of American ginseng with a rice chitinase gene.

L9 ANSWER 9 OF 25 CABA COPYRIGHT 2004 CABI on STN

TI Studies of the glucosinolate-myrosinase system in relation to insect herbivory on oilseed rape (Brassica napus) and in Arabidopsis thaliana.

L9 ANSWER 10 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI Clonin, sequence and use for producing **ascorbic acid** of L-galactose dehydrogenase from Arabidopsis thaliana

L9 ANSWER 11 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI Increasing vitamin C content of plants by yeast D-arabino- γ -lactone oxidase

L9 ANSWER 12 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI Sugarcane (Saccharum hybrid) genetic **transformation** mediated by Agrobacterium tumefaciens: production of transgenic plants expressing proteins with agronomic and industrial value

L9 ANSWER 13 OF 25 CABA COPYRIGHT 2004 CABI on STN

TI Characters of postharvest physiology of antisense ACS transgenic tomato fruits.

L9 ANSWER 14 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

TI Agrobacterium-mediated Japonica rice **transformation**: A procedure assisted by an antinecrotic treatment.

L9 ANSWER 15 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

TI Antisense inhibition of the GDP-mannose pyrophosphorylase reduces the ascorbate content in transgenic plants leading to developmental changes during senescence.

L9 ANSWER 16 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

TI Alcohol/aldehyde dehydrogenases from Gluconobacter oxydans and their fusion proteins and use in enzymic synthesis of **ascorbic acid**

L9 ANSWER 17 OF 25 CABA COPYRIGHT 2004 CABI on STN

TI Conditioning promotes regeneration and **transformation** in apple leaf explants.

L9 ANSWER 18 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

TI Effect of exogenous chemicals on the expression of CaMV 35S promoter element in transgenic tobacco plants.

L9 ANSWER 19 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Multiple mechanisms of cancer prevention by phytochemicals: interaction between cellular proliferation and endogenous mutagens

L9 ANSWER 20 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN
 TI RNA/DNA mini-prep from a single sample of orchid tissue

L9 ANSWER 21 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
 TI Expression, purification and characterization of 1-aminocyclopropane-1-carboxylate oxidase from tomato in Escherichia coli.

L9 ANSWER 22 OF 25 CABA COPYRIGHT 2004 CABI on STN
 TI Functional reconstitution of the solubilized Arabidopsis thaliana STP1 monosaccharide-H⁺ symporter in lipid vesicles and purification of the histidine tagged protein from transgenic Saccharomyces cerevisiae.

L9 ANSWER 23 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
 TI Apple ripening-related cDNA clone pAP4 confers ethylene-forming ability in **transformed** Saccharomyces cerevisiae.

L9 ANSWER 24 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Method for enhancing transmembrane transport of exogenous molecules

L9 ANSWER 25 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Variations in content of **nucleic** acids and vitamin C in Solanaceae grafts and in their seed generations during ontogenesis

=> d bib abs 16 15 12 10 6 3 1

L9 ANSWER 16 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:236562 CAPLUS
 DN 128:280233
 TI Alcohol/aldehyde dehydrogenases from Gluconobacter oxydans and their fusion proteins and use in enzymic synthesis of **ascorbic acid**

IN Asakura, Akira; Hoshino, Tatsuo; Ojima, Setsuko; Shinjoh, Masako; Tomiyama, Noribumi
 PA F. Hoffmann-La Roche A.-G., Switz.
 SO Eur. Pat. Appl., 58 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 832974	A2	19980401	EP 1997-115801	19970911
	EP 832974	A3	19991110		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CN 1183472	A	19980603	CN 1997-119521	19970918
	JP 10229885	A2	19980902	JP 1997-273790	19970919
	BR 9704748	A	19981110	BR 1997-4748	19970919
PRAI	EP 1996-115001		19960919		

AB The present invention is directed to a recombinant enzyme preparation having an alc. and/or aldehyde dehydrogenase activity which comprises one or more enzymic polypeptide(s) selected from the group consisting of 4 polypeptides which are isolated from Gluconobacter oxydans DSM 4025 and their chimeric recombinant enzymes, as well functional derivs. of the polypeptides identified above which contain addition, insertion, deletion and/or substitution of one or more amino acid residue(s). **DNA** mols. encoding such polypeptides, vectors comprising such **DNA** mols., host cells **transformed** by such vectors, and processes for the production of such recombinant enzyme preps., aldehydes, ketones or carboxylic acids by using such enzyme preps. are provided. Specifically, the synthesis of 2-keto-L-gulonic acid and L-**ascorbic acid** (vitamin C) is provided through the use of these enzymes..

L9 ANSWER 15 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
 AN 2000:21980 AGRICOLA
 DN IND22025758
 TI Antisense inhibition of the GDP-mannose pyrophosphorylase reduces the ascorbate content in transgenic plants leading to developmental changes

during senescence.

AU Keller, R.; Springer, F.; Renz, A.; Kossmann, J.
 CS Max Planck Institut, Golm, Germany.
 AV DNAL (QK710.P68)
 SO The Plant journal : for cell and molecular biology, July 1999. Vol. 19,
 No. 2. p. 131-141
 Publisher: Oxford : Blackwell Sciences Ltd.
 ISSN: 0960-7412

NTE Includes references
 CY England; United Kingdom
 DT Article
 FS Non-U.S. Imprint other than FAO
 LA English

AB GDP-mannose pyrophosphorylase (GMPase, EC 2.7.7.22) catalyses the
 synthesis of GDP-D-mannose and represents the first committed step in the
 formation of all guanosin-containing sugar nucleotides found in plants
 which are precursors for cell wall biosynthesis and, probably more
 important, the synthesis of ascorbate. A full-length cDNA encoding GMPase
 from *S. tuberosum* was isolated. Transgenic potato plants were generated in
 which the GMPase cDNA was introduced in antisense orientation to the 35S
 promoter. **Transformants** with reduced GMPase activity were
 selected. Transgenic plants were indistinguishable from the wild-type when
 held under tissue culture conditions, however, a major change was seen 10
 weeks after transfer into soil. Transgenic plants showed dark spots on
 leaf veins and stems with this phenotype developing from the bottom to the
 top of the **plant**. In case of the line with the strongest
 reduction, all aerial parts finally dried out after 3 months in soil, in
 contrast to the wild-type plants which did not start to senesce at this
 time. This coincides with a reduction of ascorbate contents in the
 transgenic plants, which is in agreement with the recently proposed
 pathway of ascorbate biosynthesis. Furthermore, leaf cell walls of the
 transgenic potato plants had mannose contents that were reduced to 30-50%
 of the wild-type levels, whereas the composition of tuber cell walls was
 unchanged. The glycosylation pattern of proteins was unaffected by GMPase
 inhibition, as studied by affino blot analysis.

L9 ANSWER 12 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:338851 CAPLUS
 DN 134:111085
 TI Sugarcane (*Saccharum* hybrid) genetic **transformation** mediated by
 Agrobacterium tumefaciens: production of transgenic plants expressing
 proteins with agronomic and industrial value

AU Enriquez, G. A.; Trujillo, L. E.; Menendez, C.; Vazquez, R. I.; Tiel, K.;
 Dafhnis, F.; Arrieta, J.; Selman, G.; Hernandez, L.
 CS Division de Plantas. Centro de Ingenieria Genetica y Biotecnologia
 (CIGB), Havana, 10 600, Cuba
 SO Developments in Plant Genetics and Breeding (2000), 5(Plant Genetic
 Engineering Towards the Third Millennium), 76-81
 CODEN: DPGBD6; ISSN: 0168-7972

PB Elsevier
 DT Journal
 LA English

AB Sugarcane is an important crop for many countries around the world. The
 industrial behavior of this crop could improved by gene engineering,
 increasing the quality of the **plant** as raw material for the
 production of sugar and/or other by products. Here we present the materials
 and methods used in Agrobacterium tumefaciens-mediated genetic
transformation of sugarcane. Our ultimate goal is to generate
 transgenic sugarcane plants expressing proteins with agronomic and
 industrial value. In order to reduce necrogenesis, which is enhanced
 during Agrobacterium-meristematic tissue interactions, explants of
 sugarcane cultivars Ja60-5 and B4362 were treated with a combination of
 antioxidant compds. The study specifically **transformed** a number of
DNA constructs (pHCA58, pHCG59, pHES82 and pHES83) which were
 created to express a number of enzymes such as chitinase, glucanase, and
 levansucrase.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 10 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:730943 CAPLUS
 DN 135:269303
 TI Clonin, sequence and use for producing **ascorbic acid**
 of L-galactose dehydrogenase from Arabidopsis thaliana

IN Smirnoff, Nicholas; Wheeler, Glen
 PA Ascorbex Limited, UK
 SO PCT Int. Appl., 58 pp.
 CODEN: PIXXD2

DT Patent
 LA English

FAN.CNT 1

PATENT NO. KIND DATE APPLICATION NO. DATE

PI WO 2001072974 A2 20011004 WO 2001-GB1412 20010329

WO 2001072974 A3 20020131

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 2004053235 A1 20040318 US 2003-240136 20030312

PRAI GB 2000-7651 A 20000329

WO 2001-GB1412 W 20010329

AB Disclosed are isolated L-galactose dehydrogenase proteins and biol. active homologs thereof, as well as **nucleic acid** mols. encoding such proteins. An Arabidopsis thaliana sequence with homol. to the N-terminal amino acid sequence of Pisum sativum L-galactose dehydrogenase was identified. An A. thaliana L-galactose dehydrogenase gene was cloned and sequenced. The cDNA and encoded amino acid sequences of the A. thaliana L-galactose dehydrogenase are disclosed. The expression of the A. thaliana L-galactose dehydrogenase in E. coli and the production of transgenic plants that overexpress L-galactose dehydrogenase are described. Also disclosed are methods of producing L-galactose dehydrogenase, and genetically modified organisms having increased L-galactose dehydrogenase action. Methods of producing L-**ascorbic acid** or esters thereof using such genetically modified organisms are disclosed.

L9 ANSWER 6 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:368225 CAPLUS

DN 136:366147

TI Monocotyledonous **plant transformation**

IN Elliott, Adrian Ross; Lakshmanan, Prakash; Geijskes, Robert Jason; Berding, Nils; Grof, Christopher Peter Leslie; Smith, Grant Richard

PA Sugar Research & Development Corporation, Australia; Bureau of Sugar Experiment Stations; Commonwealth Scientific and Industrial Research Organisation

SO PCT Int. Appl., 51 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2002037951 A1 20020516 WO 2001-AU1454 20011109

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA,
UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2002014805 A5 20020521 AU 2002-14805 20011109

EP 1349444 A1 20031008 EP 2001-983292 20011109

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI AU 2000-1431 A 20001110

WO 2001-AU1454 W 20011109

AB A method of producing a transgenic monocotyledonous **plant** includes culturing a thin section explant from a monocotyledonous **plant**, such as sugarcane, wheat or sorghum, in the presence of an auxin and, optionally, a cytokinin, prior to **transformation**. It is optimal for the thin section to be oriented during this pre-**transformation** culture period of 1-6 days so that a basal surface is substantially not in contact with the culture medium. The cultured explant is then **transformed** followed by a rest period of 4-15 days in a culture medium without selection agent but comprising an auxin and, optionally, a cytokinin. After this rest period, transgenic plants are selectively propagated from the **transformed plant** tissue in the presence of a selection agent such as paromomycin sulfate or geneticin. This system provides rapid, efficient generation of transgenic monocotyledonous plants from **transformed**, non-callus tissue and thereby reduces the likelihood of somaclonal variation among transgenic progeny.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:912750 CAPLUS

DN 139:392151
 TI Sequences of **plant** dehydroascorbate reductase ('dhar') genes and their uses in modulating **ascorbic acid** levels in plants
 IN Gallie, Daniel R.
 PA Regents of the University of California, USA
 SO U.S. Pat. Appl. Publ., 14 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003215949	A1	20031120	US 2002-161195	20020528
PRAI	US 2002-161195		20020528		

AB The present invention is generally related to **plant** genetic engineering. In particular, the invention is directed to new dehydroascorbate reductase ("DHAR") genes useful in modulating **ascorbic acid** levels in plants. The invention relates to sequence of dehydroascorbate reductase isolated from wheat, tobacco, rice, tomato and Arabidopsis. The invention relates to detecting increased drought tolerance and decreased sensitivity to toxin in plants.

L9 ANSWER 1 OF 25 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:571157 CAPLUS
 DN 139:129162
 TI **DNA** construct containing D-galacturonate reductase and method for increasing production of vitamin C in a **plant**
 IN Agius Guadalupe, Maria Fernanda; Botella Mesa, Miguel Angel; Valpuesta Fernandez, Victoriano
 PA Plant Bioscience Limited, UK
 SO PCT Int. Appl., 32 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003060136	A2	20030724	WO 2002-GB5818	20021219
	WO 2003060136	A3	20030828		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI ES 2001-2896 A 20011227
 AB Provided are **DNA** constructs that comprise a **DNA** mol. encoding a protein with D-galacturonate reductase activity involved in L-**ascorbic acid** synthesis in plant cells and a region for initiating functional transcription in plants. The invention relates to protein and nucleotide sequence of D-galacturonate reductase of strawberry. The constructs have utility in increasing vitamin C production in plants, and making plants more resistant to stress. Also provided are related materials and methods for performing the invention.

=> logoff hold
 STN INTERNATIONAL SESSION SUSPENDED AT 09:58:51 ON 29 APR 2004

FILE 'HOME' ENTERED AT 16:50:22 ON 17 JUN 2004

=> file agricola biosis caba

=> s complementation and overexpression
 L1 435 COMPLEMENTATION AND OVEREXPRESSION

=> duplicate remove l1
 L2 344 DUPLICATE REMOVE L1 (91 DUPLICATES REMOVED)

=> d ti 1-100

L2 ANSWER 1 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Menin induces apoptosis in murine embryonic fibroblasts.

L2 ANSWER 2 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

TI Reexamining the role of choline transporter-like (Ct1p) proteins in choline transport.

L2 ANSWER 3 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The yeast splicing factor Prp40p contains functional leucine-rich nuclear export signals that are essential for splicing.

L2 ANSWER 4 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI KNQ1, a *Kluyveromyces lactis* gene encoding a drug efflux permease.

L2 ANSWER 5 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Involvement of a chaperone regulator, Bcl2-associated athanogene-4, in apolipoprotein B mRNA editing.

L2 ANSWER 6 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Reversion of the lethal phenotype of an HIV-1 integrase mutant virus by **overexpression** of the same integrase mutant protein.

L2 ANSWER 7 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Biosynthetic specificity of the rhamnosyltransferase gene of *Mycobacterium avium* serovar 2 as determined by allelic exchange mutagenesis.

L2 ANSWER 8 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Expression of a cloned cyclopropane fatty acid synthase gene reduces solvent formation in *Clostridium acetobutylicum* ATCC 824.

L2 ANSWER 9 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Role of AcrR and RamA in fluoroquinolone resistance in clinical *Klebsiella pneumoniae* isolates from Singapore.

L2 ANSWER 10 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The *Bacillus thuringiensis* PlcR-regulated gene *inhA2* is necessary, but not sufficient, for virulence.

L2 ANSWER 11 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Mitofusin-1 protein is a generally expressed mediator of mitochondrial fusion in mammalian cells.

L2 ANSWER 12 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Molecular mechanisms of itraconazole resistance in *Candida dubliniensis*.

L2 ANSWER 13 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Mitochondrial phosphatidylserine decarboxylase from higher plants. Functional **complementation** in yeast, localization in plants, and **overexpression** in *Arabidopsis*.

L2 ANSWER 14 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Genetic correction of DNA repair-deficient/cancer-prone xeroderma pigmentosum group C keratinocytes.

L2 ANSWER 15 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Functional cloning of drug resistance genes from retroviral cDNA libraries.

L2 ANSWER 16 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Ksg1, a homologue of the phosphoinositide-dependent protein kinase 1, controls cell wall integrity in *Schizosaccharomyces pombe*.

L2 ANSWER 17 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Studies on gene structure, enzymatic activity and regulatory mechanism of acetohydroxy acid isomeroreductase from G2 pea.

L2 ANSWER 18 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Alternative pathway for the role of furin in tumor cell invasion process. Enhanced MMP-2 levels through bioactive TGFbeta.

L2 ANSWER 19 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The regulatory cascade that activates the Hrp regulon in *Erwinia herbicola* pv. *gypsophillae*.

L2 ANSWER 20 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Screening for functional expression and **overexpression** of a family of diiron-containing interfacial membrane proteins using the univector recombination system.

L2 ANSWER 21 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Mutations in COX15 produce a defect in the mitochondrial heme biosynthetic pathway, causing early-onset fatal hypertrophic cardiomyopathy.

L2 ANSWER 22 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI *Drosophila* NAB (dNAB) is an orphan transcriptional co-repressor required for correct CNS and eye development.

L2 ANSWER 23 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI NUCLEO-CYTOPLASMIC SHUTTLING OF THE INTESTINAL APOB RNA EDITING MACHINERY.

L2 ANSWER 24 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Characterization of multiple mutations associated with fluoroquinolone resistance in clinical *Klebsiella pneumoniae* isolates from Singapore: Role of *acrA* and *ramA*.

L2 ANSWER 25 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Construction and **overexpression** of an *E. coli* essential gene library for antibacterial target identification.

L2 ANSWER 26 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI A Chinese cabbage cDNA with high sequence identity to phospholipid hydroperoxide glutathione peroxidases encodes a novel isoform of thioredoxin-dependent peroxidase.

L2 ANSWER 27 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI **Overexpression**, purification, and site-directed spin labeling of the Nramp metal transporter from *Mycobacterium leprae*.

L2 ANSWER 28 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI *Vibrio parahaemolyticus* *scrABC*, a novel operon affecting swarming and capsular polysaccharide regulation.

L2 ANSWER 29 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI PDCD2 is a negative regulator of HCF-1 (C1).

L2 ANSWER 30 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Carbonic anhydrase is essential for growth of *Ralstonia eutropha* at ambient CO₂ concentrations.

L2 ANSWER 31 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI **Overexpression** of metallothionein-II sensitizes rodent cells to apoptosis induced by DNA cross-linking agent through inhibition of NF-kappaB activation.

L2 ANSWER 32 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The *Rhizobium etli* *cyaC* product: Characterization of a novel adenylate cyclase class.

L2 ANSWER 33 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI **Overexpression** of two different GTPases rescues a null mutation in a heat-induced rRNA methyltransferase.

L2 ANSWER 34 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Critical roles of phosphorylation and actin binding motifs, but not the central proline-rich region, for Ena/vasodilator-stimulated phosphoprotein (VASP) function during cell migration.

L2 ANSWER 35 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI IFNgamma sensitizes for apoptosis by upregulating caspase-8 expression through the Stat1 pathway.

L2 ANSWER 36 OF 344 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
 TI Both vegetative and reproductive actin isoforms complement the stunted root hair phenotype of the *Arabidopsis* *act2-1* mutations.

L2 ANSWER 37 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Swarming-coupled expression of the *Proteus mirabilis* *hpmBA* haemolysin operon.

L2 ANSWER 38 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI RNase G **complementation** of *rne* null mutation identifies functional interrelationships with RNase E in *Escherichia coli*.

L2 ANSWER 39 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI SGS1 is a multicopy suppressor of *srs2*: Functional overlap between DNA helicases.

L2 ANSWER 40 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI **Overexpression** of *ccl1-2* can bypass the need for the putative apocytochrome chaperone *CycH* during the biogenesis of c-type cytochromes.

L2 ANSWER 41 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Identification and characterization of assembly proteins of CS5 pili from enterotoxigenic *Escherichia coli*.

L2 ANSWER 42 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Low amounts of the DNA repair XPA protein are sufficient to recover
 UV-resistance.

L2 ANSWER 43 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI A defect in cystathionine beta-lyase activity causes the severe phenotype
 of a *Nicotiana plumbaginifolia* methionine auxotroph.

L2 ANSWER 44 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The *Schizosaccharomyces pombe* genes *sep10* and *sep11* encode putative
 general transcriptional regulators involved in multiple cellular
 processes.

L2 ANSWER 45 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The EWS/NOR1 fusion gene product gains a novel activity affecting pre-mRNA
 splicing.

L2 ANSWER 46 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Biochemical characterization and subcellular localization of human copper
 transporter 1 (hCTR1).

L2 ANSWER 47 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Identification of *Escherichia coli* genes involved in resistance to
 pyrazinoic acid, the active component of the tuberculosis drug
 pyrazinamide.

L2 ANSWER 48 OF 344 AGRICOLA Compiled and distributed by the National
 Agricultural Library of the Department of Agriculture of the United States
 of America. It contains copyrighted materials. All rights reserved.
 (2004) on STN
 TI Suppression of *Saccharomyces cerevisiae* *rad27* null mutant phenotypes by
 the 5' nuclease domain of *Escherichia coli* DNA polymerase I.

L2 ANSWER 49 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI **Overexpression** of Polycomb-group gene *rae28* in cardiomyocytes
 does not complement abnormal cardiac morphogenesis in mice lacking *rae28*
 but causes dilated cardiomyopathy.

L2 ANSWER 50 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The involvement of mammalian and plant FK506-binding proteins (FKBPs) in
 development.

L2 ANSWER 51 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Phospholipase C interacts with *Sgd1p* and is required for expression of
GPD1 and osmoresistance in *Saccharomyces cerevisiae*.

L2 ANSWER 52 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Synergy is achieved by **complementation** with Apo2L/TRAIL and
 actinomycin D in Apo2L/TRAIL-mediated apoptosis of prostate cancer cells:
 Role of XIAP in resistance.

L2 ANSWER 53 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Maternally supplied *Smad5* is required for ventral specification in
 zebrafish embryos prior to zygotic Bmp signaling.

L2 ANSWER 54 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The *Arabidopsis* male-sterile mutant *dde2-2* is defective in the ALLENE
 OXIDE SYNTHASE gene encoding one of the key enzymes of the jasmonic acid
 biosynthesis pathway.

L2 ANSWER 55 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Nitric oxide-induced changes in intracellular zinc homeostasis are
 mediated by metallothionein/thionein.

L2 ANSWER 56 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The Polycomb-group gene *Rae28* sustains *Nkx2.5/Csx* expression and is
 essential for cardiac morphogenesis.

L2 ANSWER 57 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI CDC42 is required for polarized growth in human pathogen *Candida albicans*.

L2 ANSWER 58 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Single copy **complementation** of *cps1aA*, a putative
 transcriptional regulator of capsule biosynthesis in group B
Streptococcus.

L2 ANSWER 59 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI *Salmonella enteritidis* *yafD* is necessary for resistance to chicken egg
 albumen.

L2 ANSWER 60 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI **Complementation** between N-terminal *Saccharomyces cerevisiae*

mre11 alleles in DNA repair and telomere length maintenance.

- L2 ANSWER 61 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Method to isolate mutants and to clone the complementing gene.
- L2 ANSWER 62 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI A novel c-Myc-responsive gene, JPOL, participates in neoplastic transformation.
- L2 ANSWER 63 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Functional analysis of the trypanosomal AAA protein TbVCP with trans-dominant ATP hydrolysis mutants.
- L2 ANSWER 64 OF 344 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI A second iron-regulatory system in yeast independent of Aft1p. DUPLICATE 18
- L2 ANSWER 65 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI DjlA is a third DnaK co-chaperone of Escherichia coli, and DjlA-mediated induction of colanic acid capsule requires DjlA-DnaK interaction.
- L2 ANSWER 66 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Candida tropicalis Etr1p and Saccharomyces cerevisiae Ybr026p (Mrf1'p), 2-enoyl thioester reductases essential for mitochondrial respiratory competence.
- L2 ANSWER 67 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Functional and mutational analysis of Pl9, a DNA transfer protein with muramidase activity.
- L2 ANSWER 68 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Histone folds mediate selective heterodimerization of yeast TAFII25 with TFIID components yTAFII47 and yTAFII65 and with SAGA component ySPT7.
- L2 ANSWER 69 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Role of double-stranded RNA-dependent protein kinase in mediating hypersensitivity of Fanconi anemia **complementation** group C cells to interferon gamma, tumor necrosis factor-alpha, and double-stranded RNA.
- L2 ANSWER 70 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Genetic characterization of highly fluoroquinolone-resistant clinical Escherichia coli strains from China: Role of acrR mutations.
- L2 ANSWER 71 OF 344 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI EARLY FLOWERING3 encodes a novel protein that regulates circadian clock function and flowering in Arabidopsis.
- L2 ANSWER 72 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Identification and cloning of gusA, encoding a new beta-glucuronidase from Lactobacillus gasseri ADH.
- L2 ANSWER 73 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI DUPLICATE 20
Multiple antibiotic resistance (mar) locus in Salmonella enterica serovar Typhimurium DT104.
- L2 ANSWER 74 OF 344 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Cell-to-cell movement of Potato virus X: the role of p12 and p8 encoded by the second and third open reading frames of the triple gene block.
- L2 ANSWER 75 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI DUPLICATE 21
The chimeric leucine-rich repeat/extensin cell wall protein LRX1 is required for root hair morphogenesis in Arabidopsis thaliana.
- L2 ANSWER 76 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Identification of a novel two-component regulatory system that acts in global regulation of virulence factors of Staphylococcus aureus.
- L2 ANSWER 77 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI A single-copy suppressor of the Saccharomyces cerevisiae late-mitotic mutants cdc15 and dbf2 is encoded by the Candida albicans CDC14 gene.
- L2 ANSWER 78 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

TI Sympathoadrenergic mechanisms in functional regulation and development of cardiac hypertrophy and failure: Findings from genetically engineered mice.

L2 ANSWER 79 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Re-expression of caspase-8 by IFNgamma through the Stat1/IRF1 pathway sensitizes resistant tumor cells for drug- or death receptor-induced apoptosis.

L2 ANSWER 80 OF 344 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
 TI Drosophila Lyra mutations are gain-of-function mutations of senseless.

L2 ANSWER 81 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Deletion of the cell-division inhibitor MinC results in lysis of Neisseria gonorrhoeae.

L2 ANSWER 82 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI AtBS14a and AtBS14b, two Bet1/Sft1-like SNAREs from Arabidopsis thaliana that complement mutations in the yeast SFT1 gene.

L2 ANSWER 83 OF 344 CABA COPYRIGHT 2004 CABI on STN
 TI Zinc phytoextraction in Thlaspi caerulescens.

L2 ANSWER 84 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI **Overexpression**, refolding, and purification of the histidine-tagged outer membrane efflux protein OprM of Pseudomonas aeruginosa.

L2 ANSWER 85 OF 344 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
 TI The involvement of two P450 enzymes, CYP83B1 and CYP83A1, in auxin homeostasis and glucosinolate biosynthesis.

L2 ANSWER 86 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Over-expression of the cercosporin facilitator protein, CFP, in Cercospora kikuchii up-regulates production and secretion of cercosporin.

L2 ANSWER 87 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI **Overexpression** of endonuclease III protects Escherichia coli mutants defective in alkylation repair against lethal effects of methylmethanesulphonate.

L2 ANSWER 88 OF 344 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
 TI Functional conservation of plant secondary metabolic enzymes revealed by **complementation** of arabidopsis flavonoid mutants with maize genes. DUPLICATE 23

L2 ANSWER 89 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Saccharomyces cerevisiae YTP1 gene is involved in hydroxylation of sphingolipid-associated fatty acids.

L2 ANSWER 90 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Granulation rescue and developmental marking of juxtaglomerular cells using "piggy-BAC" recombination of the mouse Ren locus.

L2 ANSWER 91 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Induction of cytidine to uridine editing on cytoplasmic apolipoprotein B mRNA by overexpressing APOBEC-1.

L2 ANSWER 92 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI A new gene involved in the transport-dependent metabolism of phosphatidylserine, PSTB2/PDR17, shares sequence similarity with the gene encoding the phosphatidylinositol/phosphatidylcholine transfer protein, SEC14.

L2 ANSWER 93 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Evidence for separable functions of Srplp, the yeast homolog of importin alpha (karyopherin alpha): Role for Srplp and Stslp in protein degradation.

L2 ANSWER 94 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Value of Tumor M2 (Tu M2-PK) in patients with renal carcinoma.

L2 ANSWER 95 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The redox-sensitive transcriptional activator OxyR regulates the peroxide

response regulon in the obligate anaerobe *Bacteroides fragilis*.

- L2 ANSWER 96 OF 344 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 24
- TI The molecular physiology of heavy metal transport in the Zn/Cd
hyperaccumulator *Thlaspi caerulescens*.
- L2 ANSWER 97 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
- TI HAR07 encodes chorismate mutase of the methylotrophic yeast *Hansenula*
polymorpha and is derepressed upon methanol utilization.
- L2 ANSWER 98 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
- TI **Overexpression**, purification, and analysis of
complementation behavior of *E. coli* SuhB protein: Comparison with
bacterial and archaeal inositol monophosphatases.
- L2 ANSWER 99 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
- TI The apoptosis mediator mDAP-3 is a novel member of a conserved family of
mitochondrial proteins.
- L2 ANSWER 100 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
- TI A novel multidrug efflux transporter gene of the major facilitator
superfamily from *Candida albicans* (FLU1) conferring resistance to
fluconazole.

=> d bib abs 88 54

- L2 ANSWER 88 OF 344 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 23
- AN 2002:8977 AGRICOLA
- DN IND23245658
- TI Functional conservation of plant secondary metabolic enzymes revealed by
complementation of arabidopsis flavonoid mutants with maize genes.
- AU Dong, X.; Braun, E.L.; Grotewold, E.
- AV DNAL (450 P692)
- SO Plant physiology, Sept 2001. Vol. 127, No. 1. p. 46-57
Publisher: Rockville, MD : American Society of Plant Physiologists, 1926-
CODEN: PLPHAY; ISSN: 0032-0889
- NTE Includes references
- CY Maryland; United States
- DT Article; Conference
- FS U.S. Imprints not USDA, Experiment or Extension
- LA English
- AB Mutations in the transparent testa (tt) loci abolish pigment production in
Arabidopsis seed coats. The TT4, TT5, and TT3 loci encode chalcone
synthase, chalcone isomerase, and dihydroflavonol 4-reductase,
respectively, which are essential for anthocyanin accumulation and may
form a macromolecular complex. Here, we show that the products of the
maize (*Zea mays*) C2, CH11, and A1 genes complement Arabidopsis tt4, tt5,
and tt3 mutants, restoring the ability of these mutants to accumulate
pigments in seed coats and seedlings. **Overexpression** of the
maize genes in wild-type Arabidopsis seedlings does not result in
increased anthocyanin accumulation, suggesting that the steps catalyzed by
these enzymes are not rate limiting in the conditions assayed. The
expression of the maize A1 gene in the flavonoid 3' hydroxylase
Arabidopsis tt7 mutant resulted in an increased accumulation of
pelargonidin. We conclude that enzymes involved in secondary metabolism
can be functionally exchangeable between plants separated by large
evolutionary distances. This is in sharp contrast to the notion that the
more relaxed selective constraints to which secondary metabolic pathways
are subjected is responsible for the rapid divergence of the corresponding
enzymes.
- L2 ANSWER 54 OF 344 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 15
- AN 2003:110270 BIOSIS
- DN PREV200300110270
- TI The Arabidopsis male-sterile mutant dde2-2 is defective in the ALLENE
OXIDE SYNTHASE gene encoding one of the key enzymes of the jasmonic acid
biosynthesis pathway.
- AU von Malek, Bernadette; van der Graaff, Eric; Schneitz, Kay; Keller, Beat
[Reprint Author]
- CS Institute of Plant Biology, University of Zurich, Zollikerstr. 107, 8008,
Zurich, Switzerland
bkeller@botinst.unizh.ch
- SO Planta (Berlin), (November 2002) Vol. 216, No. 1, pp. 187-192. print.
CODEN: PLANAB. ISSN: 0032-0935.

DT Article
 LA English
 ED Entered STN: 26 Feb 2003
 Last Updated on STN: 26 Feb 2003
 AB The *Arabidopsis thaliana* (L.) Heynh. mutant delayed-dehiscence2-2 (dde2-2) was identified in an *En1/Spml* transposon-induced mutant population screened for plants showing defects in fertility. The dde2-2 mutant allele is defective in the anther dehiscence process and filament elongation and thus exhibits a male-sterile phenotype. The dde2-2 phenotype can be rescued by application of methyl jasmonate, indicating that the mutant is affected in jasmonic acid biosynthesis. The combination of genetic mapping and a candidate-gene approach identified a frameshift mutation in the ALLENE OXIDE SYNTHASE (AOS) gene, encoding one of the key enzymes of jasmonic acid biosynthesis. Expression analysis and genetic **complementation** of the dde2-2 phenotype by **overexpression** of the AOS coding sequence confirmed that the male-sterile phenotype is indeed caused by the mutation in the AOS gene.

=> s l2 and (arabidopsis or review)

L3 25 L2 AND (ARABIDOPSIS OR REVIEW)

=> d ti 1-25

L3 ANSWER 1 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

TI Similar genetic switch systems might integrate the floral inductive pathways in dicots and monocots.

L3 ANSWER 2 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

TI The translation initiation factor eIF1A is an important determinant in the tolerance to NaCl stress in yeast and plants.

L3 ANSWER 3 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

TI Both vegetative and reproductive actin isoforms complement the stunted root hair phenotype of the *Arabidopsis* act2-1 mutations.

L3 ANSWER 4 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

TI The involvement of two P450 enzymes, CYP83B1 and CYP83A1, in auxin homeostasis and glucosinolate biosynthesis.

L3 ANSWER 5 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

TI Functional conservation of plant secondary metabolic enzymes revealed by **complementation** of *arabidopsis* flavonoid mutants with maize genes.

L3 ANSWER 6 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

TI EARLY FLOWERING3 encodes a novel protein that regulates circadian clock function and flowering in *Arabidopsis*.

L3 ANSWER 7 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

TI An *Arabidopsis* histone H2A mutant is deficient in *Agrobacterium* T-DNA integration.

L3 ANSWER 8 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

TI *Arabidopsis* cop8 and fus4 mutations define the same gene that encodes subunit 4 of the COP9 signalosome.

L3 ANSWER 9 OF 25 AGRICOLA Compiled and distributed by the National

- Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI A highly conserved kinase in an essential component for stress tolerance in yeast and plant cells.
- L3 ANSWER 10 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI delta7-Sterol-C5-desaturase: molecular characterization and functional expression of wild-type and mutant alleles.
- L3 ANSWER 11 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI **Overexpression** of rice phytochrome A partially complements phytochrome B deficiency of **Arabidopsis**.
- L3 ANSWER 12 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI pSa causes oncogenic suppression of Agrobacterium by inhibiting VirE2 protein export.
- L3 ANSWER 13 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI The **Arabidopsis** thaliana proton transporters, AtNhx1 and Avp1, can function in cation detoxification in yeast.
- L3 ANSWER 14 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI **Arabidopsis** mutants resistant to the auxin effects of indole-3-acetonitrile are defective in the nitrilase encoded by the NIT1 gene.
- L3 ANSWER 15 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI Molecular characterization of a putative **Arabidopsis** thaliana copper transporter and its yeast homologue.
- L3 ANSWER 16 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI A cdc5+ homolog of a higher plant, **Arabidopsis** thaliana.
- L3 ANSWER 17 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI Isolation of the **Arabidopsis** GA4 locus. [Erratum: June 1997, v. 9 (6), p. 979-980.]
- L3 ANSWER 18 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
- TI The hy3 long hypocotyl mutant of **Arabidopsis** is deficient in phytochrome B.
- L3 ANSWER 19 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
- TI Mitochondrial phosphatidylserine decarboxylase from higher plants. Functional **complementation** in yeast, localization in plants, and **overexpression** in **Arabidopsis**.
- L3 ANSWER 20 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
- TI The **Arabidopsis** male-sterile mutant dde2-2 is defective in the ALLENE OXIDE SYNTHASE gene encoding one of the key enzymes of the jasmonic acid biosynthesis pathway.
- L3 ANSWER 21 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
- TI The involvement of mammalian and plant FK506-binding proteins (FKBP5) in development.

L3 ANSWER 22 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI AtBS14a and AtBS14b, two Bet1/Sft1-like SNAREs from **Arabidopsis** thaliana that complement mutations in the yeast SFT1 gene.

L3 ANSWER 23 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI The chimeric leucine-rich repeat/extensin cell wall protein LRX1 is required for root hair morphogenesis in **Arabidopsis** thaliana.

L3 ANSWER 24 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Members of the **Arabidopsis** 14-3-3 gene family trans-complement two types of defects in fission yeast.

L3 ANSWER 25 OF 25 CABA COPYRIGHT 2004 CABI on STN
 TI Zinc phytoextraction in *Thlaspi caerulescens*.

=> d bib abs 19 18 17 15 14 11

L3 ANSWER 19 OF 25 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 AN 2004:143150 BIOSIS
 DN PREV200400131796
 TI Mitochondrial phosphatidylserine decarboxylase from higher plants. Functional **complementation** in yeast, localization in plants, and **overexpression** in **Arabidopsis**.

AU Rontein, Denis; Wu, Wen-L.; Voelker, Dennis R.; Hanson, Andrew D. [Reprint Author]
 CS Horticultural Sciences Department, University of Florida, Gainesville, FL, 32611, USA
 adha@mail.ifas.ufl.edu
 SO Plant Physiology (Rockville), (July 2003) Vol. 132, No. 3, pp. 1678-1687. print.
 ISSN: 0032-0889 (ISSN print).

DT Article
 LA English
 ED Entered STN: 10 Mar 2004
 Last Updated on STN: 10 Mar 2004

AB Plants are known to synthesize ethanolamine (Etn) moieties by decarboxylation of free serine (Ser), but there is also some evidence for phosphatidyl-Ser (Ptd-Ser) decarboxylation. Database searches identified diverse plant cDNAs and an **Arabidopsis** gene encoding 50-kD proteins homologous to yeast (*Saccharomyces cerevisiae*) and mammalian mitochondrial Ptd-Ser decarboxylases (PSDs). Like the latter, the plant proteins have putative mitochondrial targeting and inner membrane sorting sequences and contain near the C terminus a Glycine-Serine-Threonine motif corresponding to the site of proteolysis and catalytic pyruvoyl residue formation. A truncated tomato (*Lycopersicon esculentum*) cDNA lacking the targeting sequence and a chimeric construct in which the targeting and sorting sequences were replaced by those from yeast PSD1 both complemented the Etn requirement of a yeast psd1 psd2 mutant, and PSD activity was detected in the mitochondria of the complemented cells. Immunoblot analysis of potato (*Solanum tuberosum*) mitochondria demonstrated that PSD is located in mitochondrial membranes, and mRNA analysis in **Arabidopsis** showed that the mitochondrial PSD gene is expressed at low levels throughout the plant. An **Arabidopsis** knockup mutant grew normally but had 6- to 13-fold more mitochondrial PSD mRNA and 9-fold more mitochondrial PSD activity. Total membrane PSD activity was, however, unchanged in the mutant, showing mitochondrial activity to be a minor part of the total. These results establish that plants can synthesize Etn moieties via a phospholipid pathway and have both mitochondrial and extramitochondrial PSDs. They also indicate that mitochondrial PSD is an important housekeeping enzyme whose expression is strongly regulated at the transcriptional level.

L3 ANSWER 18 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
 (2004) on STN
 AN 92:54827 AGRICOLA
 DN IND92029989
 TI The hy3 long hypocotyl mutant of **Arabidopsis** is deficient in phytochrome B.

AU Somers, D.E.; Sharrock, R.A.; Tepperman, J.M.; Quail, P.H.
 CS University of California, Berkeley
 AV DNAL (QK725.P532)
 SO The Plant cell, Dec 1991. Vol. 3, No. 12. p. 1263-1274
 Publisher: Rockville, Md. : American Society of Plant Physiologists.
 ISSN: 1040-4651

NTE Includes references.
 DT Article
 FS U.S. Imprints not USDA, Experiment or Extension
 LA English

AB The six long hypocotyl (hy) **complementation** groups of **Arabidopsis** (hyl, hy2, hy3, hy4, hy5, and hy6) share the common feature of an elongated hypocotyl when grown in white light. The varied responses of these mutants to irradiations of differing wavelengths have suggested that some of the lines may lack elements of the phytochrome signal transduction pathway. We have performed immunoblot and RNA gel blot analyses of the multiple types of phytochrome present in wild-type and mutant **Arabidopsis** and provide evidence that mutations at the HY3 locus cause a specific deficiency in phytochrome B. Using an *Escherichia coli* **overexpression** system, we have developed and identified monoclonal antibodies that selectively recognize phytochromes A, B, and C from **Arabidopsis**. In wild-type plants, phytochrome A is highly abundant in etiolated tissue, but rapidly decreases about 200-fold upon illumination. Phytochromes B and C are present at much lower levels in etiolated tissue but are unaffected by up to 24 hr of red light illumination, and together predominate in green seedlings. These data establish that phytochromes B and C are "type 2" or photostable phytochromes. Levels of phytochromes A, B, and C similar to those of the wild type are observed in strains containing mutations at the HY4 and HY5 loci. In contrast, all four hy3 mutant alleles tested here exhibit a modest (twofold to threefold) reduction in phyB transcript and a severe (20- to 50-fold) deficiency in phyB-encoded protein, relative to levels in wild-type plants. The levels of phyA- and phyC-encoded mRNA and protein, however, are indistinguishable from the wild type in these mutants. We conclude that the phenotype conferred by hy3 is due to the reduced levels of the light-stable phytochrome B.

L3 ANSWER 17 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

AN 95:27920 AGRICOLA

DN IND20456926

TI Isolation of the **Arabidopsis** GA4 locus. [Erratum: June 1997, v. 9 (6), p. 979-980.]

AU Chiang, H.H.; Hwang, I.; Goodman, H.M.

CS Massachusetts General Hospital, Boston, MA.

SO The Plant cell, Feb 1995. Vol. 7, No. 2. p. 195-201

Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-

CODEN: PLCEEW; ISSN: 1040-4651

NTE Includes references

CY Maryland; United States

DT Article

FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB Progeny from a transgenic **Arabidopsis** plant generated by the *Agrobacterium* root transformation procedure were found to segregate for a gibberellin (GA) responsive semidwarf phenotype. **Complementation** analysis with genetically characterized GA-responsive mutants revealed that the transgenic plant has an insertional mutation (ga4-2) that is an allele of the ga4 locus. The semidwarf phenotype of ga4-2 is inherited as a recessive mutation that cosegregates with both the T-DNA insert and the kanamycin resistance trait. DNA gel blot analysis indicated that the insertion site contains a complex T-DNA unit. A genomic library was constructed with DNA from the tagged ga4 mutant; a DNA clone was isolated from the library that flanks the T-DNA insert. The plant sequence isolated from this clone was used to isolate the corresponding full-length genomic and cDNA clones from wild-type libraries. DNA sequence comparison of the clones to the existing data bases suggests that they encode a hydroxylase. This conclusion is in agreement with a biochemical study that indicated that the ga4 mutant is deficient in 3 beta-hydroxylase in the GA biosynthetic pathway of **Arabidopsis**. RNA gel blot analysis showed that the message is ubiquitously expressed in different tissues of **Arabidopsis** but most abundantly in the silique. Unexpectedly a higher level of transcription was detected in the ethyl methanesulfonate-induced ga4 mutant and this **overexpression** was repressed by treatment with exogenous GA.

L3 ANSWER 15 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

AN 97:43063 AGRICOLA

DN IND20572627

TI Molecular characterization of a putative **Arabidopsis thaliana** copper transporter and its yeast homologue.

AU Kampfenkel, K.; Kushnir, S.; Babiychuk, E.; Inze, D.; Montagu, M. van.

CS Universiteit Gent, Gent, Belgium.

AV DNAL (381 J824)

SO The Journal of biological chemistry, Nov 24, 1995. Vol. 270, No. 47. p. 28479-28486

Publisher: Bethesda, Md. : American Society for Biochemistry and Molecular Biology.
 CODEN: JBCHA3; ISSN: 0021-9258

NTE Includes references
 CY Maryland; United States
 DT Article
 FS U.S. Imprints not USDA, Experiment or Extension
 LA English

AB At the molecular level, little is known about the transport of copper across plant membranes. We have isolated an **Arabidopsis thaliana** cDNA by **complementation** of a mutant (ctrl-3) of *Saccharomyces cerevisiae* defective in high affinity copper uptake. This cDNA codes for a highly hydrophobic protein (COPT1) of 169 amino acid residues and with three putative transmembrane domains. Most noteworthy, the first 44 residues display significant homology to the methionine- and histidine-rich copper binding domain of three bacterial copper binding proteins, among these a copper transporting ATPase. Mutant yeast cells expressing COPT1 exhibit nearly wild type behavior with regard to growth on a nonfermentable carbon source and resistance to copper and iron starvation. Expression of COPT1 is also associated with an increased sensitivity to copper toxicity. Additionally, COPT1 shows significant homology to an open reading frame of 189 amino acid residues on yeast chromosome VIII. This gene (CTR2) may encode an additional yeast metal transporter able to mediate the uptake of copper. A mutation in CTR2 displays a higher level of resistance to toxic copper concentrations. **Overexpression** of CTR2 provides increased resistance to copper starvation and is also associated with an increased sensitivity to copper toxicity. The amino acid sequence of CTR2, like **Arabidopsis** COPT1, contains three potential transmembrane domains. Taken together, the data suggest that a plant metal transporter, which is most likely involved in the transport of copper, has been identified.

L3 ANSWER 14 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
 (2004) on STN
 AN 1998:58633 AGRICOLA
 DN IND21235311
 TI **Arabidopsis** mutants resistant to the auxin effects of indole-3-acetonitrile are defective in the nitrilase encoded by the NIT1 gene.
 AU Normanly, J.; Grisafi, P.; Fink, G.R.; Bartel, B.
 AV DNAL (QK725.P532)
 SO The Plant cell, Oct 1997. Vol. 9, No. 10. p. 1781-1790
 Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
 CODEN: PLCEEW; ISSN: 1040-4651

NTE Includes references
 CY Maryland; United States
 DT Article
 FS U.S. Imprints not USDA, Experiment or Extension
 LA English

AB Indole-3-acetonitrile (IAN) is a candidate precursor of the plant growth hormone indole-3-acetic acid (IAA). We demonstrated that IAN has auxinlike effects on **Arabidopsis** seedlings and that exogenous IAN is converted to IAA in vivo. We isolated mutants with reduced sensitivity to IAN that remained sensitive to IAA. These mutants were recessive and fell into a single **complementation** group that mapped to chromosome 3, within 0.5 centimorgans of a cluster of three nitrilase-encoding genes, NIT1, NIT2, and NIT3. Each of the three mutants contained a single base change in the coding region of the NIT1 gene, and the expression pattern of NIT1 is consistent with the IAN insensitivity observed in the nit1 mutant alleles. The half-life of IAN and levels of IAA and IAN were unchanged in the nit1 mutant, confirming that **Arabidopsis** has other functional nitrilases. Overexpressing NIT2 in transgenic **Arabidopsis** caused increased sensitivity to IAN and faster turnover of exogenous IAN in vivo.

L3 ANSWER 11 OF 25 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
 (2004) on STN
 AN 1999:59431 AGRICOLA
 DN IND21998184
 TI **Overexpression** of rice phytochrome A partially complements phytochrome B deficiency of **Arabidopsis**.
 AU Halliday, K.J.; Bolle, C.; Chua, N.H.; Whitelam, G.C.
 CS Leicester University, UK.
 AV DNAL (450 P693)
 SO Planta, Jan 1999. Vol. 207, No. 3. p. 401-409
 Publisher: Berlin ; New York : Springer-Verlag, 1925-
 CODEN: PLANAB; ISSN: 0032-0935

NTE Includes references
 CY Germany
 DT Article
 FS Non-U.S. Imprint other than FAO
 LA English
 AB The red far-red reversible phytochromes play a central role in regulating the development of plants in relation to their light environment. Studies on the roles of different members of the phytochrome family have mainly focused on light-labile, phytochrome A and light-stable, phytochrome B. Although these two phytochromes often regulate identical responses, they appear to have discrete photosensory functions. Thus, phytochrome A predominantly mediates responses to prolonged far-red light, as well as acting in a non-red/ far-red-reversible manner in controlling responses to light pulses. In contrast, phytochrome B mediates responses to prolonged red light and acts photoreversibly under light-pulse conditions. However, it has been reported that rice (*Oryza sativa* L.) phytochrome A operates in a classical red far-red reversible fashion following its expression in transgenic tobacco plants. Thus, it was of interest to determine whether transgenic rice phytochrome A could substitute for loss of phytochrome B in phyB mutants of *Arabidopsis thaliana* (L.) Heynh. We have observed that ectopic expression of rice phytochrome A can correct the reduced sensitivity of phyB hypocotyls to red light and restore their response to end-of-day far-red treatments. The latter is widely regarded as a hallmark of phytochrome B action. However, although transgenic rice phytochrome A can correct other aspects of elongation growth in the phyB mutant it does not restore other responses to end-of-day far-red treatments nor does it restore responses to low red:far-red ratio. Furthermore, transgenic rice phytochrome A does not correct the early-flowering phenotype of phyB seedlings.

=> logoff hold
 STN INTERNATIONAL SESSION SUSPENDED AT 17:03:20 ON 17 JUN 2004

FILE 'HOME' ENTERED AT 13:00:26 ON 18 JUN 2004

=> file agricola biosis caplus caba embase

=> s (phosphoglucose isomerase) or phosphomannomutase or (mannose pyrophosphorylase) or (mannose epimerase)
 L1 4018 (PHOSPHOGLUCOSE ISOMERASE) OR PHOSPHOMANNOMUTASE OR (MANNOSE PYROPHOSPHORYLASE) OR (MANNOSE EPIMERASE)

=> s l1 and vitamin
 L2 30 L1 AND VITAMIN

=> duplicate remove l2
 L3 19 DUPLICATE REMOVE L2 (11 DUPLICATES REMOVED)

=> d ti 1-19

L3 ANSWER 1 OF 19 CABA COPYRIGHT 2004 CABI on STN
 TI GDP-mannose 3[prime],5[prime]-epimerase forms GDP-L-gulose, a putative intermediate for the de novo biosynthesis of **vitamin C** in plants.

L3 ANSWER 2 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Identification, characterization, cloning and sequence of multimeric GDP-mannose-3',5'-epimerase from *Arabidopsis thaliana* and other plants, and use of recombinant GDP-mannose-3',5'-epimerase for production of ascorbic acid

L3 ANSWER 3 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Aberrantly expressed proteins in laser capture microdissected tumors

L3 ANSWER 4 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Enhanced stress resistance in transgenic plants with increased expression of VTC4 gene encoding GDP-mannose **pyrophosphorylase**

L3 ANSWER 5 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Endocrine disruptor screening using DNA chips of endocrine disruptor-responsive genes

L3 ANSWER 6 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Detection of variations in the DNA methylation profile of genes in the determining the risk of disease

L3 ANSWER 7 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Criteria for the identification of housekeeping genes and their use as internal standards in the measurement of levels of gene expression

L3 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN

TI Partial purification and identification of GDP-mannose 3',5'-epimerase of *Arabidopsis thaliana*, a key enzyme of the plant **vitamin C** pathway

L3 ANSWER 9 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
TI L-Ascorbic acid biosynthesis

L3 ANSWER 10 OF 19 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Isolation of cDNAs encoding enzymes involved in L-ascorbate biosynthesis and regeneration in peach.

L3 ANSWER 11 OF 19 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Identification of ascorbic acid-deficient *Arabidopsis thaliana* mutants.

L3 ANSWER 12 OF 19 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
TI Tapetoretinal degenerations: Experiences, experiments and expectations.

L3 ANSWER 13 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Vitamin C** (L-ascorbic acid) production in microorganisms and plants genetically engineered for increased sugar epimerase activity

L3 ANSWER 14 OF 19 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Genetic evidence for the role of GDP-mannose in plant ascorbic acid (**vitamin C**) biosynthesis. DUPLICATE 2

L3 ANSWER 15 OF 19 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Linkage between the loci for serum albumin and **vitamin D** binding protein (GC) in the Japanese quail.

L3 ANSWER 16 OF 19 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Close linkage between the loci for serum albumin and **vitamin D** binding protein (GC) in Japanese quail.

L3 ANSWER 17 OF 19 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI EFFECTS OF **VITAMIN B-6** DEFICIENCY ON LIVER KIDNEY AND ADIPOSE TISSUE ENZYMES ASSOCIATED WITH CARBOHYDRATE AND LIPID METABOLISM AND ON GLUCOSE UPTAKE BY RAT EPIDIDYMAL ADIPOSE TISSUE.

L3 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
TI Carbohydrate metabolism in scorbutic guinea pigs

L3 ANSWER 19 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
TI A role for biotin in yeast glycolysis

=> d bib abs 1 2 8 10 13

L3 ANSWER 1 OF 19 CABA COPYRIGHT 2004 CABI on STN
AN 2004:24170 CABA
DN 20033210505
TI GDP-mannose 3[prime],5[prime]-epimerase forms GDP-L-gulose, a putative intermediate for the de novo biosynthesis of **vitamin C** in plants
AU Wolucka, B. A.; Montagu, M. van; van Montagu, M.
CS Department of Molecular Microbiology, Flanders Interuniversity Institute for Biotechnology (VIB), Kasteelpark Arenberg 31, B-3001 Leuven-Heverlee, Belgium. beata.wolucka@bio.kuleuven.ac.be
SO Journal of Biological Chemistry, (2003) Vol. 278, No. 48, pp. 47483-47490. 52 ref.
Publisher: American Society for Biochemistry and Molecular Biology Inc. Bethesda
ISSN: 0021-9258
CY United States
DT Journal
LA English
ED Entered STN: 20040206
Last Updated on STN: 20040206
AB Despite its importance for agriculture, bioindustry, and nutrition, the fundamental process of L-ascorbic acid (**vitamin C**) biosynthesis in plants is not completely elucidated, and little is known about its regulation. The recently identified GDP-Man 3[prime],5[prime]-epimerase catalyzes a reversible epimerization of GDP-D-mannose that precedes the committed step in the biosynthesis of **vitamin C**, resulting in the hydrolysis of the highly energetic glycosyl-pyrophosphoryl linkage. Here, we characterize the native and recombinant GDP-Man 3[prime],5[prime]-epimerase of *Arabidopsis thaliana*. GDP and GDP-D-glucose are potent competitive inhibitors of the enzyme, whereas GDP-L-fucose gives a complex type of inhibition. The epimerase contains a modified version of the NAD binding motif and is inhibited by NAD(P)H and

stimulated by NAD(P)⁺. A feedback inhibition of **vitamin C** biosynthesis is observed apparently at the level of GDP-Man 3[prime],5[prime]-epimerase. The epimerase catalyzes at least two distinct epimerization reactions and releases, besides the well known GDP-L-galactose, a novel intermediate: GDP-L-gulose. The yield of the epimerization varies and seems to depend on the molecular form of the enzyme. Both recombinant and native enzymes co-purified with a Hsp70 heat-shock protein (*Escherichia coli* DnaK and *A. thaliana* Hsc70.3, respectively). We speculate, therefore, that the Hsp70 molecular chaperones might be involved in folding and/or regulation of the epimerase. In summary, the plant epimerase undergoes a complex regulation and could control the carbon flux into the **vitamin C** pathway in response to the redox state of the cell, stress conditions, and GDP-sugar demand for the cell wall/glycoprotein biosynthesis. Exogenous L-gulose and L-gulono-1,4-lactone serve as direct precursors of L-ascorbic acid in plant cells. We propose an L-gulose pathway for the de novo biosynthesis of **vitamin C** in plants.

L3 ANSWER 2 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:977982 CAPLUS

DN 138:51919

TI Identification, characterization, cloning and sequence of multimeric GDP-mannose-3',5'-epimerase from *Arabidopsis thaliana* and other plants, and use of recombinant GDP-mannose-3',5'-epimerase for production of ascorbic acid

IN Wolucka, Beata

PA Vlaams Interuniversitair Instituut voor Biotechnologie Vzw, Belg.

SO PCT Int. Appl., 138 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002103001	A1	20021227	WO 2002-EP6891	20020614
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
PRAI	EP 2001-202278	A	20010615		

AB The identification of a new key enzyme in **vitamin C** synthesis, and its use to modulate **vitamin C** synthesis in eukaryotic cells are disclosed. Specifically, the isolation of a multimeric GDP-mannose-3',5'-epimerase, the identification, cloning and expression of a nucleic acid sequence encoding GDP-mannose-3',5'-epimerase, methods of producing GDP-mannose-3',5'-epimerase, transgenic plants and microorganisms that express the GDP-mannose-3',5'-epimerase, and methods of production of ascorbic acid using the GDP-mannose-3',5'-epimerase are disclosed. Purification of GDP-mannose-3',5'-epimerase from *Arabidopsis thaliana*, and kinetic and physicochem. properties of the enzyme are described. The nucleotide sequence and the encoded amino acid sequence of the *A. thaliana* GDP-mannose-3',5'-epimerase are disclosed. Putative GDP-mannose-3',5'-epimerase from rice, tomato, corn, ice plant, soybean, potato, *Medicago truncatula*, sorghum, wheat, barley, and lotus are identified by using scanning of public DNA databases for sequences that exhibited high similarity to the *A. thaliana* gene.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:9366 CAPLUS

DN 136:196031

TI Partial purification and identification of GDP-mannose 3'',5''-epimerase of *Arabidopsis thaliana*, a key enzyme of the plant **vitamin C** pathway

AU Wolucka, Beata A.; Persiau, Geert; Van Doorsselaere, Jan; Davey, Mark W.; Demol, Hans; Vandekerckhove, Joel; Van Montagu, Marc; Zabeau, Marc; Boerjan, Wout

CS Departments of Molecular and Plant Genetics, Faculty of Medicine, Flanders Interuniversity Institute for Biotechnology (VIB), Ghent University, Ghent, B-9000, Belg.

SO Proceedings of the National Academy of Sciences of the United States of America (2001), 98(26), 14843-14848
CODEN: PNASA6; ISSN: 0027-8424

EB National Academy of Sciences

DT Journal

LA English
 AB The first step in the biosynthetic pathway of **vitamin C** in plants is the formation, at the level of sugar nucleotide, of L-galactosyl residues, catalyzed by a largely unknown GDP-D-mannose 3'',5''-epimerase. By using combined conventional biochem. and mass spectrometry methods, we obtained a highly purified preparation of GDP-D-mannose 3'',5''-epimerase from an Arabidopsis thaliana cell suspension. The native enzyme is an 84-kDa dimer, composed of two apparently identical subunits. In-gel tryptic digestion of the enzyme subunit, followed by peptide sequencing and a BLAST search, led to the identification of the epimerase gene. The closest homolog of the plant epimerase is the BlmG gene product of Streptomyces sp., a putative NDP-D-mannose 5''-epimerase. The plant GDP-D-mannose 3'',5''-epimerase is, to our knowledge, a novel member of the extended short-chain dehydrogenase/reductase family. The enzyme was cloned and expressed in Escherichia coli cells.

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 10 OF 19 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 AN 2001:266663 BIOSIS
 DN PREV200100266663
 TI Isolation of cDNAs encoding enzymes involved in L-ascorbate biosynthesis and regeneration in peach.
 AU Tamura, Shigeyuki [Reprint author]; Imai, Tsuyoshi; Sugaya, Sumiko; Matsuta, Nagao
 CS Coll. Agrobio. Res., Tsukuba Univ., Tsukuba, 305-8572, Japan
 SO Plant and Cell Physiology, (2001) Vol. 42, No. Supplement, pp. s192. print.
 Meeting Info.: Symposia and Workshops of the 2001 Annual Meeting of the Japanese Society of Plant Physiologists. Fukuoka, Japan. March 23-26, 2001. Japanese Society of Plant Physiologists.
 CODEN: PCPHA5. ISSN: 0032-0781.
 DT Conference; (Meeting)
 Conference; Abstract; (Meeting Abstract)
 Conference; (Meeting Poster)
 LA English
 ED Entered STN: 6 Jun 2001
 Last Updated on STN: 19 Feb 2002

L3 ANSWER 13 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:795985 CAPLUS
 DN 132:31775
 TI **Vitamin C** (L-ascorbic acid) production in microorganisms and plants genetically engineered for increased sugar epimerase activity
 IN Berry, Alan; Running, Jeffrey A.; Severson, David K.; Burlingame, Richard P.
 PA DCV Inc., Doing Business as Bio-Technical Resources, USA
 SO PCT Int. Appl., 187 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9964618	A1	19991216	WO 1999-US11576	19990526
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002012979	A1	20020131	US 1999-318271	19990525
	CA 2331198	AA	19991216	CA 1999-2331198	19990526
	AU 9942051	A1	19991230	AU 1999-42051	19990526
	EP 1084267	A1	20010321	EP 1999-925846	19990526
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
	JP 2002517256	T2	20020618	JP 2000-553608	19990526
PRAI	US 1998-88549P	P	19980608		
	US 1999-125073P	P	19990317		
	US 1999-125054P	P	19990318		
	WO 1999-US11576	W	19990526		

AB A biosynthetic method for producing **vitamin C** (ascorbic acid, L-ascorbic acid, or AA) is disclosed, such method including fermentation of a microorganism or plant having at least one genetic modification to increase the action of an enzyme involved in the ascorbic acid biosynthetic pathway. Included is the use of nucleotide sequences encoding epimerases, including the endogenous GDP-D-mannose:GDP-L-galactose epimerase from the L-ascorbic acid pathway and homologues thereof for the purposes of improving the biosynthetic production of ascorbic

acid. The present invention also relates to genetically modified microorganisms, such as strains of microalgae, bacteria and yeast useful for producing L-ascorbic acid, and to genetically modified plants, useful for producing consumable plant food products.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s (phosphomannose isomerase) and vitamin
L4 6 (PHOSPHOMANNOSE ISOMERASE) AND VITAMIN

=> d ti 1-6

L4 ANSWER 1 OF 6 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Golden Indica and Japonica rice lines amenable to deregulation.

L4 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
TI Bioengineered 'golden' indica rice cultivars with β -carotene metabolism in the endosperm with hygromycin and mannose selection systems

L4 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
TI Golden Indica and Japonica rice lines amenable to deregulation

L4 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
TI Identification, characterization, cloning and sequence of multimeric GDP-mannose-3',5'-epimerase from Arabidopsis thaliana and other plants, and use of recombinant GDP-mannose-3',5'-epimerase for production of ascorbic acid

L4 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Vitamin C** (L-ascorbic acid) production in microorganisms and plants genetically engineered for increased sugar epimerase activity

L4 ANSWER 6 OF 6 CABA COPYRIGHT 2004 CABI on STN
TI Golden Indica and Japonica rice lines amenable to deregulation.

=> s (vitamin C) and plant
L5 4690 (VITAMIN C) AND PLANT

=> s l5 and (transform? or transgen?)
L6 63 L5 AND (TRANSFORM? OR TRANSGEN?)

=> duplicate remove l6
L7 53 DUPLICATE REMOVE L6 (10 DUPLICATES REMOVED)

=> d ti 1-25

L7 ANSWER 1 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Myo-inositol oxygenase offers a possible entry point into **plant** ascorbate biosynthesis

L7 ANSWER 2 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Use of compositions containing petasin -containing, petasin-depleted or petasin-free petasite extracts as specific COX-2 inhibitors

L7 ANSWER 3 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI DNA construct containing D-galacturonate reductase and method for increasing production of **vitamin C** in a **plant**

L7 ANSWER 4 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Acetobacter sorbose and sorbosone dehydrogenases and genes, **transgenic** organisms expressing them, and methods for producing 2-keto-l-gulonic acid and **vitamin C**

L7 ANSWER 5 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Vitamin production in **transgenic** plants.

L7 ANSWER 6 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI **Plant** breeding: Opportunities for integration with genomic technologies to improve horticultural crop nutritive value.

L7 ANSWER 7 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2
TI Engineering increased **vitamin C** levels in plants by overexpression of a D-galacturonic acid reductase

L7 ANSWER 8 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Effect of lignosulfonates on controlling of urea nitrogen **transformation** and nitrate accumulation in vegetable.

L7 ANSWER 9 OF 53 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
TI Oxidative stress in viral and alcoholic hepatitis.

L7 ANSWER 10 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Identification, characterization, cloning and sequence of multimeric GDP-mannose-3',5'-epimerase from Arabidopsis thaliana and other plants, and use of recombinant GDP-mannose-3',5'-epimerase for production of ascorbic acid

L7 ANSWER 11 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Enhanced stress resistance in **transgenic** plants with increased expression of VTC4 gene encoding GDP-mannose pyrophosphorylase

L7 ANSWER 12 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 TI 14-3-3 Protein regulation of the antioxidant capacity of **transgenic** potato tubers

L7 ANSWER 13 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Increasing **vitamin C** content of plants by yeast D-arabino- γ -lactone oxidase

L7 ANSWER 14 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Increase in lipid content in potato tubers modified by 14-3-3 gene overexpression

L7 ANSWER 15 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Human $\Delta 5$ -desaturase gene and its cloning and uses in nutritional and other compositions

L7 ANSWER 16 OF 53 CABA COPYRIGHT 2004 CABI on STN
 TI Compositional analysis of tubers from insect and virus resistant potato plants.

L7 ANSWER 17 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
 TI Ascorbic acid in plants: biosynthesis and function

L7 ANSWER 18 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Ascorbic acid in plants: Biosynthesis and function

L7 ANSWER 19 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Metabolic engineering of an alternative pathway for ascorbic acid biosynthesis in plants.

L7 ANSWER 20 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 4
 TI Genetic evidence for the role of GDP-mannose in **plant** ascorbic acid (**vitamin C**) biosynthesis.

L7 ANSWER 21 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Alcohol/aldehyde dehydrogenases from Gluconobacter oxydans and their fusion proteins and use in enzymic synthesis of ascorbic acid

L7 ANSWER 22 OF 53 CABA COPYRIGHT 2004 CABI on STN
 TI Changes in some nutritional traits in genetically modified potatoes.

L7 ANSWER 23 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI LDL oxidation: Therapeutic perspectives.

L7 ANSWER 24 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Active constituents of Emblica officinalis: Part 1. The chemistry and antioxidative effects of two new hydrolyzable tannins, emblicanin A and B

L7 ANSWER 25 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
 TI Chemical contents in fruits of **transgenic** tomato carrying the TMV coat protein gene, nontransgenic tomato, and other Lycopersicon species.

=> d bib abs 13 7 5 4 3 1

L7 ANSWER 13 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:78550 CAPLUS
 DN 134:142747
 TI Increasing **vitamin C** content of plants by yeast D-arabino- γ -lactone oxidase
 IN Hunter, Karl John
 PA Unilever PLC, UK; Unilever NV; Hindustan Lever Limited
 SO PCT Int. Appl., 39 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001007634	A1	20010201	WO 2000-EP5965	20000627
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
PRAI	EP 1999-305939	A	19990726		
AB	The invention relates to plants or products derivable therefrom having an elevated content of Vitamin C , by transformation of plant by yeast D-arabino-γ-lactone oxidase resulted in higher level (at least two-fold) of ascorbic acid. In particular the invention relates to a process for producing plants or plant tissues having an elevated content of vitamin C , comprising the steps, (i) transformation of a plant cell with a gene construct followed by (ii) the regeneration of a genetically modified plant or plant tissue from the transformed plant cell of the transformation step (i), wherein the gene construct comprises a polynucleotide sequence capable of expressing a polypeptide product with an ability to catalyze conversion of L-galactono-1,4-lactone to vitamin C , characterized in that said polynucleotide sequence is derived from a non- plant source.				
RE.CNT	6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT				
L7	ANSWER 7 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2				
AN	2003:75114 CAPLUS				
DN	138:363425				
TI	Engineering increased vitamin C levels in plants by overexpression of a D-galacturonic acid reductase				
AU	Agius, Fernanda; Gonzalez-Lamothe, Rocio; Caballero, Jose L.; Munoz-Blanco, Juan; Botella, Miguel A.; Valpuesta, Victoriano				
CS	Departamento de Biologia Molecular y Bioquimica, Universidad de Malaga, Malaga, 29071, Spain				
SO	Nature Biotechnology (2003), 21(2), 177-181 CODEN: NABIF9; ISSN: 1087-0156				
PB	Nature Publishing Group				
DT	Journal				
LA	English				
AB	L-Ascorbic acid (vitamin C) in fruits and vegetables is an essential component of human nutrition. Surprisingly, only limited information is available about the pathway(s) leading to its biosynthesis in plants. Here, we report the isolation and characterization of GalUR, a gene from strawberry that encodes an NADPH-dependent D-galacturonate reductase. We provide evidence that the biosynthesis of L-ascorbic acid in strawberry fruit occurs through D-galacturonic acid, a principal component of cell wall pectins. Expression of GalUR correlated with changing ascorbic acid content in strawberry fruit during ripening and with variations in ascorbic acid content in fruit of different species of the genus Fragaria. Reduced pectin solubilization in cell walls of transgenic strawberry fruit with decreased expression of an endogenous pectate lyase gene resulted in lower ascorbic acid content. Overexpression of GalUR in Arabidopsis thaliana enhanced vitamin C content two- to threefold, demonstrating the feasibility of engineering increased vitamin C levels in plants using this gene.				
RE.CNT	31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT				
L7	ANSWER 5 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN				
AN	2003:483107 BIOSIS				
DN	PREV200300483107				
TI	Vitamin production in transgenic plants.				
AU	Herbers, Karin [Reprint Author]				
CS	SunGene GmbH and Co. KGaA, Corrensstr. 3, D-06466, Gatersleben, Germany karin.herbers@sungene.de				
SO	Journal of Plant Physiology, (July 2003) Vol. 160, No. 7, pp. 821-829. print. CODEN: JPPHEY. ISSN: 0176-1617.				
DT	Article				
LA	English				
ED	Entered STN: 15 Oct 2003 Last Updated on STN: 15 Oct 2003				
AB	Plants are a major source of vitamins in the human diet. Due to their significance for human health and development, research has been initiated to understand the biosynthesis of vitamins in plants. The pathways that				

are furthest advanced in elucidation are those of provitamin A, **vitamin C** and vitamin E. There is little knowledge about the regulation, storage, sink and degradation of any vitamin made in plants, or the interaction of vitamin biosynthetic pathways with other metabolic pathways. Researchers as well as life science companies have endeavoured to manipulate levels of vitamins in order to create functional food with enhanced health benefits, and even with the goal of achieving levels worth extracting from **plant** tissues. Thus far, metabolic engineering has resulted in **transgenic** plants that contain elevated levels of provitamin A, **vitamin C** and E, respectively. Additional research is necessary to identify all relevant target genes in order to further improve and tailor plants with elevated vitamin contents at will.

L7 ANSWER 4 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:76926 CAPLUS

DN 138:132233

TI Acetobacter sorbose and sorbosone dehydrogenases and genes, **transgenic** organisms expressing them, and methods for producing 2-keto-l-gulonic acid and **vitamin C**

IN Eichler, Knut; Beck, Christine; Friedrich, Thomas

PA BASF Aktiengesellschaft, Germany

SO PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003008588	A2	20030130	WO 2002-EP7484	20020705
	WO 2003008588	A3	20031106		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI DE 2001-10133397 A 20010713

AB The invention relates to polypeptides having an L-sorbose dehydrogenase (SDH) or L-sorbose dehydrogenase (SNDH) activity and nucleic acid sequences that code for these polypeptides. The invention also relates to **transgenic** expression constructs, vectors and **transgenic** organisms containing these nucleic acid sequences, and to methods for producing 2-keto-L-gulonic acid or ascorbic acid while using the same. Thus, Acetobacter liquefaciens genes for SDH and SNDH were cloned, sequenced, and expressed in Escherichia coli. The enzymes were purified and shown to have SDH and SNDH activities.

L7 ANSWER 3 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:571157 CAPLUS

DN 139:129162

TI DNA construct containing D-galacturonate reductase and method for increasing production of **vitamin C** in a **plant**

IN Agius Guadalupe, Maria Fernanda; Botella Mesa, Miguel Angel; Valpuesta Fernandez, Victoriano

PA Plant Bioscience Limited, UK

SO PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003060136	A2	20030724	WO 2002-GB5818	20021219
	WO 2003060136	A3	20030828		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI ES 2001-2896 A 20011227

AB Provided are DNA constructs that comprise a DNA mol. encoding a protein with D-galacturonate reductase activity involved in L-ascorbic acid synthesis in plant cells and a region for initiating functional transcription in plants. The invention relates to protein and nucleotide sequence of D-galacturonate reductase of strawberry. The constructs have utility in increasing **vitamin C** production in plants, and making plants more resistant to stress. Also provided are related materials and methods for performing the invention.

L7 ANSWER 1 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:260070 CAPLUS
DN 140:403425
TI Myo-inositol oxygenase offers a possible entry point into **plant** ascorbate biosynthesis

AU Lorence, Argelia; Chevone, Boris I.; Mendes, Pedro; Nessler, Craig L.
CS Department of Plant Pathology, Physiology, Bioinformatics Institute, Virginia Polytechnic Institute and State University, Blacksburg, VA, 24061, USA

SO Plant Physiology (2004), 134(3), 1200-1205
CODEN: PLPHAY; ISSN: 0032-0889

PB American Society of Plant Biologists
DT Journal
LA English

AB Two biosynthetic pathways for ascorbate (L-ascorbic acid [AsA]; **vitamin C**) in plants are presently known, the mannose/L-galactose pathway and an L-GalUA pathway. Here, we present mol. and biochem. evidence for a possible biosynthetic route using myo-inositol (MI) as the initial substrate. A MI oxygenase (MIOX) gene was identified in chromosome 4 (miox4) of Arabidopsis ecotype Columbia, and its enzymic activity was confirmed in bacterially expressed recombinant protein. Miox4 was primarily expressed in flowers and leaves of wild-type Arabidopsis plants, tissues with a high concentration of AsA. Ascorbate levels increased 2- to 3-fold in homozygous Arabidopsis lines overexpressing the miox4 open reading frame, thus suggesting the role of MI in AsA biosynthesis and the potential for using this gene for the agronomic and nutritional enhancement of crops.

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> logoff hold
STN INTERNATIONAL SESSION SUSPENDED AT 13:18:17 ON 18 JUN 2004